

CLAIMS

1.(withdrawn) A process for treating a polluted liquid having at least one contaminant in intimate mixed relation therein, including the steps of passing the polluted liquid under pressure through a cross-flow filter module having a filter with a series of lumens having filter membranes extending substantially parallel with the flow of said polluted liquid; maintaining the flow at a predetermined minimum velocity to substantially sustain scouring of the surface of said membrane by said liquid; maintaining said pressure to induce passage of said liquid as a permeate in a substantially unpolluted, filtered condition through said filter membrane into a permeate space, wherein the concentration of said contaminant in said polluted liquid is progressively increased; applying a pressure back-pulse to said filtered liquid in said permeate space to reverse flow through said filter membrane, in at least partial cleaning relation therewith, and collecting said polluted liquid and said filtered liquid for disposal.

2. (withdrawn) The process as set forth in Claim 1, including the step of introducing a cleaning solution in place of said permeate liquid; and back-flushing said filter membrane with said solution to at least partially remove a said contaminant therefrom.

3. (withdrawn) The process as set forth in Claim 2, including draining said cleaning solution from said module; and continuing to pass said polluted liquid through said module.

4. (withdrawn) The process as set forth in Claim 1, including back-flushing said permeate to substantially cover said membrane, prior to applying said pressure to

said polluted liquid.

5. (withdrawn) The process as set forth in Claim 2, including the step of heating said cleaning solution, to promote the effectiveness thereof.

6. (withdrawn) The process as set forth in Claim 5, including the step of recirculating said contaminated liquid in a closed circuit, to raise the temperature thereof, whereby the temperature of said module and said cleaning solution are raised, to promote the cleaning action of said cleaning solution.

7. (withdrawn) The process as set forth in Claim 2, wherein said polluted liquid is water and said contaminant is oil, said cleaning solution being selected from the group consisting of citric acid, nitric acid, non-caustic alkaline low-foam metal cleaning detergent, hydrogen peroxide, sodium hydroxide, and mutually compatible combinations thereof.

8. (withdrawn) The process as set forth in Claim 2, said cleaning solution being a mixture of a plurality of mutually compatible cleaning solutions.

9. (withdrawn) The process as set forth in Claim 2, wherein said filter module is operated cyclically, with a period when said polluted liquid is circulated through said module and said permeate is removed from the module being followed by a period when at least one said cleaning solution is applied to said filter in situ, in cleaning relation therewith.

10.(withdrawn). The process as set forth in Claim 9, wherein said process is automatically cycled to include periods of filtration activity, periods of cleaning, and quiescent periods, said periods being programmed to provide a desired rate of

filtering operation.

11. (withdrawn) The process as set forth in Claim 2, wherein said permeate space is minimized, to effectively minimize the quantity of said cleaning solution required to fill said permeate space, whereby said step of introducing said cleaning solution may be repeatedly and economically applied.